

## ***Water Quality Standards and Modeling – Top Hit List 2017***

### **Water Quality Standards Triennial Review:**

*Purpose:* DEQ will propose that the Board initiate rulemaking to amend the adoption by reference of Circular DEQ-7 in ARM Title 17. DEQ will also propose amendments to ARM Title 17, Chapter 30. The proposed amendments to DEQ-7 and ARM 17.30 fall into the following general categories: (1) correction of errors, (2) re-wording statements for clarification, (3) updating sections for consistency with other state and federal rules, and (4) more detailed interpretation of certain standards to facilitate practical implementation.

#### *Key Milestones:*

- BER meeting Dec 9, 2016
- Public comment period on changes

*Key Staff:* Amy Steinmetz

*Partnerships or Contracts:* BER

### **Nutrient Variance 2017**

*Purpose:* Circular 12-B technical review requirement. EPA requesting significant changes to comply with their revised WQS Variance requirements (Aug2015)

#### *Key Milestones:*

- Dec 2016 – DEQ feedback to EPA
- Jan 2017 – Nutrient Workgroup Meeting
- April 2017 – Target completion date of DEQ 12B and Implementation Guidance
- July 1, 2017 – Hard deadline for updated rule signature by Director.

*Key Staff:* Mike Suplee

*Partnerships or Contracts:* Nutrient Workgroup

### **SB325:**

*Purpose:* Rule making for MCA 75-5-222 (SB 325), and also referred to as the ‘State regulation for natural conditions’.

#### *Key Milestones:*

- Rule Language and guidance for Part 1
- Development of Performance Based Method for Arsenic
- Rule package adoption

*Key Staff:* Amy Steinmetz, Mike Suplee, Melissa Schaar

*Partnerships or Contracts:* SB325 Stakeholder Workgroup

**Arsenic:** see SB325

### **Ammonia:**

*Purpose:* MT DEQ is currently studying the most recently recommended ammonia criteria as outlined in

the publication EPA 822-R-13-001 Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater, 2013 and its implication to the state. MT DEQ has identified that implementing the new ammonia criteria poses substantial implementation challenges.

The implementation challenges are technical, social and economic. The technical difficulties surround understanding the complex science of ammonia, the probable effectiveness of alternative treatment options, and identifying the natural biological communities. The social and economic challenges are primarily though not limited to developing a workable strategy that combines the science with applicable and affordable options to achieve compliance for the smaller publically owned treatment works (POTWs).

MT DEQ has an end responsibility to protect the waters of the state and the aquatic community that lives within it. To reach this end the department has an obligation to implement criteria that are protective and possible to achieve. To address both the responsibility and the obligation the department is developing a list of strategy options to accompany the future potential adoption of the ammonia criteria.

*Key Milestones:*

- 7 point strategy
- Calculating ammonia criteria – deep dive data analysis. Complete.
- Permittee outreach on importance of site specific data for mixing zones
- What is our universe (prev work by Matt Kent)
- Lagoon BMP study – field for next 3-4 years Joliet/Red Lodge

*Key Staff:* Mike Suplee, Melissa Schaar

*Partnerships or Contracts:* Community of Joliet

**Immediate Response Issues:**

- Big Sky Spill
- Yellowstone River Fish Kill
- Zebra Mussels?
- Clark Canyon Reservoir turbidity assessment – leading data analysis and interpretation component
- Etc...

**Selenium:**

*Purpose:* In June 2016 EPA finalized an update of their 1999 recommended national chronic aquatic life criteria for selenium. The final criteria are expressed both in terms of fish tissue concentration (egg/ovary, whole body, muscle) and water concentration (lentic, lotic). In addition, we have been working with BC Ministry of Environment to address rising Se levels in Lake K. We are pursuing site specific Se standards adequately protective of aquatic life and sensitive species.

*Key Milestones:*

- Completion of Site Specific Lake K actions
  - State of the Lake
  - Kd

- Model completion in next year and then site specific recommendation and approval by monitoring committee
- EPA has released draft guidance on how to implement this as a WQS....do we adopt? If adopted – can we implement a hierarchy for MAS (i.e. if water column exceedances occur – then look to muscle/tissue based)

*Key Staff:* Terri Mavencamp

*Partnerships or Contracts:* Lake Koocanusa Monitoring and Research Group. Numerous contracts.

### **Numeric Nutrient Criteria:**

*Purpose:* Though we have adopted numeric nutrient criteria for Wadeable streams across the state, there are some water bodies remaining.

*Key Milestones:*

- Flathead Lake – Scenic Beauty Use Designation , keep at current condition
  - Model – criteria implications
- Upper Yellowstone River – addressing peer review comments
- Middle Missouri – Holter to Loma
- Canyon Ferry - need bloom conditions – skeletal crew with USGS targeted seasonal timing
  - Response of receiving water to loading
  - Is that loading achievable – modeling
- Lakes and Reservoirs in general – data sets are complete...is this a priority for the Dept?

*Key Staff:* Mike Suplee, Erik Makus, Kyle Flynn

*Partnerships or Contracts:* Nutrient Workgroup. Flathead Lake BioStation

### **Hardness Based Metals:**

*Purpose:* For most metals EPA uses dissolved metals for criteria, and Montana requires total recoverable

*Key Milestones:*

- Desk exercise- calculate change in permit values using a conservative factor – in multiple permits – Rosie
- Study design and field effort 2017 if we find that conversion and translator factors that are geographically relevant
- Process for implementation for site specific BLM – Melissa/Kyle
- Are sediment standards necessary in conjunction with TD?
  - What would these look like? Canada has adopted these
  - Look at sediment data from reference sites

*Key Staff:* Rosie Sada, Kyle Flynn, Melissa Schaar

*Partnerships or Contracts:*

### **Aluminum:**

*Purpose:* EPA recommends the criteria for Al in the water column as the total recoverable fraction. In Montana (we are not sure of the date of adoption, but it was prior to 1995) we adopted the dissolved

fraction of aluminum as the water quality criteria. EPA has been very clear that they do not believe this is protective of aquatic life.

*Key Milestones:*

- Desktop exercise –
  - a. what would be the difference in criteria from TD to TR
  - b. What would be the implications of changing (permitting, MAS)
  - c. Do we need to explore criteria outside of the stated pH range?
- Methodology change needed for sampling?
  - a. Aluminum: do we need to explore criteria outside of the stated pH range?

*Key Staff:* Rosie Sada, Amy Steinmetz

*Partnerships or Contracts:*

**EC/SAR**

*Purpose:* EPA approved our site specific standards for EC and SAR for the mainstems Rosebud Creek, Tongue, Powder and Little Powder Rivers, as well as associated tributaries and the Tongue River Reservoir. Standard as approved... is it attainable? If not, what do we do, how do we change it?

*Key Milestones:*

- outline our plan of action
- Cue for next SB325 performance based criteria

*Key Staff:* Amy Steinmetz, Erik Makus

*Partnerships or Contracts:*

**New World Mine District**

*Purpose:* Temporary water quality standards were set in place in the New World Mine District (Fisher Creek, Daisy Creek, Stillwater River in Cooke City area) in 2008, to allow for USFS to proceed with cleanup of the historic mine wastes. Temp standards were extended for an additional 5 years and are set to expire in June 2019. Though restoration is complete, on-going monitoring shows continued metals exceedances. Forest Service would like move out of CERCLA but not if there will be WQ exceedances. What can the state do?

*Key Milestones:*

- Jan – discussion with EPA on UAA process and need for demonstration of natural or ‘this is as good as it gets’
- Rule package adoption

*Key Staff:* Eric Regensburger , Erik Makus, Amy Steinmetz

*Partnerships or Contracts:* USFS, Gallatin Custer – MaryBeth Marks

**Oil and Gas Data Analysis**

*Purpose:* 3 year data collection effort complete. Impact of oil and gas development on surface water quality.

*Key Milestones:*

- Scope out needs and outline process with Darrin/ Eric

- Data analysis assistance
- Joint document completion with MBMG

*Key Staff:* Monitoring and Assessment, Melissa Schaar, Rosie Sada

*Partnerships or Contracts:* Montana Bureau of Mines and Geology

### **Reference Project**

*Purpose:* Long-term monitoring on over 110 sites across the state that represent reference (non-anthropogenic) conditions

*Key Milestones:*

- Contracts in place and field staff trained – spring 2017

*Key Staff:* Rosie Sada

*Partnerships or Contracts:* University of Montana contract and partially funded with BLM grant funds

### **Frequency and Duration:**

*Purpose:* Footnote (16) needs to be updated to reflect duration component of human health standards. Also needs to be changed at ARM 17.30.1006(6).

- Footnote (16) states that human health standards are not to be exceeded at any time.
- Human health criteria are based on a 70-year lifespan and it is not appropriate to implement them as “not to exceed” values.

*Key Milestones:*

- Need to research how other states are implementing the duration component of human health standards. (Complete) May be more appropriate to use a harmonic mean or some other method of accounting for changes in concentrations over time?
- Briefing paper on survey results. Submit to ACWA.

*Key Staff:* Terri Mavencamp

*Partnerships or Contracts:* ACWA

### **Dissolved Oxygen- Eastern Montana**

*Purpose:* The main objective of this project is to test the following hypotheses: Is the  $\Delta$  DO threshold of  $\geq 5.3$  mg/L appropriate for wadeable prairie streams? Is the periphyton nutrient increaser metric providing results that correspond to the  $\Delta$  DO and the nutrient concentrations observed in wadeable prairie streams? Is the DO numeric standard applicable to prairie streams?

*Key Milestones:* Complete last field season 2017

*Key Staff:* Rosie Sada

*Partnerships or Contracts:* BLM

### **Foundational – Tying Designated Uses to associated Criteria**

*Purpose:* Address myriad of issues (as well as repeated critiques from EPA) that arise as a result of the foundation of our water quality standards where we have multiple designated uses (17) associated with only a single set of criteria.

*Key Milestones:* Outline a process forward

*Key Staff:* Amy Steinmetz

*Partnerships or Contracts:*